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COUMARINS FROM *Stellera chamaejasme*

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Furocoumarins [1], flavonoids [2], and biflavanones [3] have been isolated previously from the roots of *Stellera chamaejasme* L., family *Thymelaeaceae*. We have investigated the epigeal part of this plant collected in the flowering period in Dauria (Chita province).

The air-dry herbage (1.3 kg) has twice extracted with water-methanol (1:1). The coumarins were extracted from the resulting solution, after its concentration, with chloroform. The material from the chloroform extract (10.8 g) was chromatographed on a column of silica gel with chloroform to which methanol was added in gradient fashion. On further purification by chromatography and crystallization, substances (I-III) were obtained in the individual form.

Substance I — $C_9H_6O_3$, mp 229°C (methanol), M^+ 162.

Substance II — $C_{15}H_{12}O_7$, mp 246-247°C (ethanol-chloroform), M^+ 352.

Substance III — $C_9H_6O_4$, mp 254-255°C (acetone), M^+ 178.

With the aid of UV, IR, and PMR spectroscopy and comparison with literature information [4-6], substances (I) and (III) were identified as the coumarins umbelliferone and daphnetin, respectively, and substance (II) as the dicoumarin daphnoretin. In the identification of daphnoretin we used, in addition, the results of elementary analysis and prepared daphnoretin methyl ether with mp 232°C (ethanol).

Scopoletin was identified by chromatography on paper impregnated with formamide-acetone (1:3) in chloroform in comparison with an authentic sample.

The coumarins mentioned above were also isolated from the roots of *S. chamaejasme*. This is the first time that any of the compounds identified have been found in this plant.

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ESTERS OF *Ferula akitschkensis*

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In the present communication we give the results of an investigation of esters from the roots of *Ferula akitschkensis* B. Fedisch. ex K-Pol. gathered in Mongolia. Esters of ferutinol and akichenol had previously been isolated from roots of this plant collected in the Kirghiz SSR [1, 2].

By ethanolic extraction of the raw material followed by the separation of the combined extractive substances, we obtained phenolic, acidic, and neutral fractions.

By chromatographing the phenolic fraction on a column of silica gel with elution by chloroform containing increasing concentrations of ethyl acetate we isolated five crystalline compounds: (I) — $C_{23}H_{32}O_5$, mp 130–131°C, $[\alpha]_D + 100.2^\circ$; (II) — $C_{22}H_{30}O_4$, mp 120–121°C, $[\alpha]_D + 66^\circ$; (III) — $C_{27}H_{36}O_7$, mp 66–67°C, $[\alpha]_D - 45^\circ$; (IV) — $C_{27}H_{36}O_6$, mp 160–161°C, $[\alpha]_D - 8.1^\circ$; and (V) — $C_{22}H_{30}O_5$, mp 53–54°C, $[\alpha]_D + 28^\circ$.

On the basis of their physicochemical constants and spectral characteristics, compounds (I–V) were identified as ferutin, ferutinol, akiferidinol, akichenol, and akiferidin, respectively [1–5].

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